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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 99693-6507-LA	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/B2003/005023	International filing date (day/month/year) 05.11.2003	Priority date (day/month/year) 05.11.2003
International Patent Classification (IPC) or both national classification and IPC H01M2/16		
Applicant HIBAR SYSTEMS LIMITED et al.		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 6 sheets.</p> <p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the opinion</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>		
Date of submission of the demand 27.01.2005	Date of completion of this report 07.02.2006	
Name and mailing address of the International preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer Boussard, N Telephone No. +49 89 2399-7196 

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/IB2003/005023

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1, 5-10 as originally filed
2-4 received on 27.01.2005 with letter of 24.01.2005

Claims, Numbers

1-16 received on 27.01.2005 with letter of 24.01.2005

Drawings, Sheets

1/6-6/6 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☒ the claims, Nos.: 17
- ☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/B2003/005023**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	7-16
	No: Claims	1
Inventive step (IS)	Yes: Claims	7-16
	No: Claims	1-6
Industrial applicability (IA)	Yes: Claims	1-16
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Reference is made to the following documents:

- D1: PATENT ABSTRACTS OF JAPAN vol. 007, no. 178 (E-191), 6 August 1983 (1983-08-06) & JP 58 082465 A (MATSUSHITA DENKI SANGYO KK), 18 May 1983 (1983-05-18)
- D2: PATENT ABSTRACTS OF JAPAN vol. 1996, no. 01, 31 January 1996 (1996-01-31) & JP 07 245091 A (MATSUSHITA ELECTRIC IND CO LTD), 19 September 1995 (1995-09-19)
- D3: US-B1-6 270 833 (YAMASHITA KATSUHIRO ET AL) 7 August 2001 (2001-08-07)

2. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

Claim 1 discloses a cylindrical separator for cylindrical cells, comprising a cylindrical body constituted by a multi-layered non-woven sheet material wound around a mandrel and a bottom part formed from the extension of said cylindrical body by wetting, folding and fusing. Such a separator is well-known from the prior art (see D1, D2 or D3 (col 3, lines 4-6 and 48-67; col 4, lines 1-20)). The claimed separator is further defined by the steps of its manufacture, which however cannot distinguish the claimed separator over the prior art. Consequently any document which discloses a separator as defined above - even if obtained by a different process - takes away the novelty of the claimed subject-matter.

Claim 1 therefore lacks novelty with regard to the cylindrical separators disclosed in documents D1, D2 and D3.

3. Dependent claims 2-6 do not contain any features which, in combination with the features of claim 1 to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step.
4. Claims 7-16 are directed towards a method for making a cylindrical separator closed

at the bottom by winding a sheet separator material around a rotating mandrel and then wetting, folding, drying and fusing the bottom part formed from the extension of said wound sheet.

The method claimed in the present application differs from the methods known from D1 or D2 in that in the folding step, the rotating mandrel and separator are guided above a stationary rail provided with a forming groove with varying profile, the extended portion is then inserted into said groove having a profile corresponding to that of the head portion of the mandrel and the wetted extended portion is gradually folded from the edge towards the central zone to close the bottom part.

The technical effect achieved thereby is a simple and easy manufacturing process for making a wrinkle-free and perfect separator bottom closure.

Such a guided and supported folding is not disclosed or suggested in the cited documents D1 or D2, wherein the extended portion is pressed in a downward movement against a stationary die leading to wrinkles and a poor bottom closure. Moreover D2 involves an additional cut step and the need of a separate cup to provide the required sealing. Claims 7-16 therefore are novel and inventive.

Consequently claims 7-16 meet the requirements of Article 33(1) PCT.